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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,497	10/24/2002	Haren S. Gandhi	FCHM 0104 PUS / 201-0553	9077

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EXAMINER	
JOHNSON, JONATHAN J	

ART UNIT	PAPER NUMBER
1725	

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/065,497	GANDHI ET AL.	
	Examiner	Art Unit	
	Jonathan Johnson	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20,31 and 32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20,31,32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-20 and 31-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Sung et al.

Sung et al. (US 6,087,298) discloses a catalyst apparatus comprising an upstream catalyst and a downstream catalyst, each having a first and second layer, useful in the purification of exhaust gas. It is taught that a useful and preferred first upstream layer has: from about 0.003 to about 0.6 g/in^3 of at least one palladium component; from 0 to about 0.065 g/in^3 of at least one first platinum and/or first rhodium component; from about 0.15 to about 2.0 g/in^3 of a first support; from about 0.05 to about 2.0 g/in^3 of the total of the first oxygen storage components in the first layer; from 0.0 and preferably about 0.025 to about 0.5 g/in^3 of at least one first alkaline earth metal component; from 0.0 and preferably about 0.025 to about 0.5 g/in^3 of a first zirconium component; and from 0.0 and preferably about 0.025 to about 0.5 g/in^3 of at least one first rare earth metal component selected from the group consisting of ceria metal components,

lanthanum metal components and neodymium metal component (column 11, line 64 – column 12, line 13).

It is taught that a useful and preferred second upstream layer has: from about 0.003 g/in^3 to about 0.6 g/in^3 of at least one second palladium component; from 0.0 g/in^3 to about 0.065 g/in^3 of at least one first platinum and/or rhodium component; from about 0.15 g/in^3 to about 2.0 g/in^3 of a second support; from 0.0 and preferably about 0.025 g/in^3 to about 0.5 g/in^3 of at least one second rare earth metal component selected from the group consisting of lanthanum metal components and neodymium metal components; from 0.0 and preferably about 0.25 g/in^3 to about 0.5 g/in^3 of at least one second alkaline earth metal component; and from 0.0 and preferably about 0.025 to about 0.5 g/in^3 of a second zirconium component (column 12, lines 14-30).

It is taught that the first layer requires an alkaline earth metal component and/or a rare earth component, and the second layer requires an alkaline earth metal component and/or a rare earth metal component (column 12, lines 30-35). The first and/or second layer can have from 0.0 to about 2.0 g/in^3 of an oxygen storage composite comprising particulate form of ceria-zirconia composite (column 12, lines 35-38). The first upstream layer can be supported on a substrate, preferably a honeycomb carrier, and the second upstream layer is supported on the first upstream layer applied on the substrate (column 12, lines 40-45), where the first zone is upstream of the second zone (col. 12 and 15).

Next, the reference teaches a useful and preferred first downstream layer has: from about 0.0175 to about 0.3 g/in^3 of palladium component; from about 0 to about 0.065 g/in^3 of a first platinum component; from about 0.15 to about 2.0 g/in^3 of a first support; from about 0.025 to

about 0.5 g/in^3 of at least one first alkaline earth metal component; from about 0.025 to about 0.5 g/in^3 of a first zirconium component; and from about 0.025 to about 0.5 g/in^3 of at least one first rare earth metal component selected from the group consisting of ceria metal components, lanthanum metal components and neodymium metal component (column 15, lines 5-22).

It is further taught that a useful and preferred second downstream layer has: from about 0.001 g/in^3 to about 0.03 g/in^3 of a rhodium component; from about 0.001 g/in^3 to about 0.15 g/in^3 of platinum; from about 0.15 g/in^3 to about 1.5 g/in^3 of a second support; from about 0.1 to 2.0 g/in^3 of a second oxygen storage composition; from about 0.025 g/in^3 to about 0.5 g/in^3 of at least one second rare earth metal component selected from the group consisting of lanthanum metal components and neodymium metal components; and from about 0.025 to about 0.5 g/in^3 of a second zirconium component (column 15, lines 23-37). It is taught the first downstream layer can be supported on a substrate, preferably a honeycomb carrier, and the second downstream layer is supported on the first layer applied on the substrate (column 15, lines 40-45).

The reference teaches that hydrogen sulfide suppressants, such as nickel or iron oxide, may be added to either the upstream or downstream catalyst composition (column 23, lines 25-35 and column 30, lines 63-67).

With respect to claims 1-20 and 31, the upstream catalyst is considered to meet the first catalyst, with the first upstream layer corresponding to the claimed second zone and the second upstream layer corresponding to the first zone, and the downstream catalyst is considered to meet the second catalyst. With respect to claims 21-30, the upstream catalyst is considered to meet the first catalyst, with the first upstream layer corresponding to the claimed bottom layer and the second upstream layer corresponding to the top layer, and the downstream catalyst is considered

to meet the second catalyst. With respect to claim 32, the first upstream layer is considered to correspond to claimed second zone, the second upstream layer is considered to correspond to the first zone, and the downstream catalyst is considered to meet the the third zone.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Sung et al.

3. Claim 31 is rejected under 35 U.S.C. 102(b) as being anticipated by EP 1 108 863.

EP 1 108 863 discloses a catalyst composition useful in the purification of exhaust gases. With reference to Example (page 7), the reference teaches the preparation of a closed coupled three-way catalyst (TWC) and a NOx reducing catalyst. The closed couple TWC comprises the noble metals, Pt, Pd, and Rh, and Ce and Zr carried on an activated alumina powder, coated on a monolithic substrate. The NOx reducing catalyst comprises Pd-carried alumina, Pt-carried alumina, and Rh-carried alumina coated on a monolithic substrate which further contains cesium oxide. The NOx reducing catalyst does not contain CeO_2. It is taught that the NOx reducing catalyst was disposed downstream of the closed coupled TWC (page 7, lines 55-59). With respect to the language of the claims, the closed coupled TWC is considered to meet the claimed first zone and the NOx reducing catalyst is considered to meet the claimed second zone.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by EP 1 108 863.

4. Claim 31 is rejected under 35 U.S.C. 102(e) as being anticipated by Deeba et al.

Deeba et al. (US 6,375,910) discloses a catalyst composition useful in the purification of exhaust gas. With reference to Example 1 (columns 18-19), the reference teaches a multi-zoned

catalytic trap F prepared by juxtaposing catalytic trap C and catalytic trap E having the following compositions:

	Catalytic Trap C	Catalytic Trap E
Bottom Layer:	Pt: 60 g/ft^3 Rh: 15 g/ft^3 NOx sorbent: 0.15 g/in^3 BaO, 0.10 g/in^3 CeO_2-ZrO_2, 0.08 g/in^3 ZrO_2	Pt: 30 g/ft^3 Rh: 5 g/ft^3 NOx sorbent: 0.15 g/in^3 BaO, 0.08 g/in^3 ZrO_2
Top Layer:	Pd: 90 g/ft^3 NOx sorbent: 0.20 g/in^3 BaO, 0.25 g/in^3 CeO_2-ZrO_2, 0.08 g/in^3 ZrO_2	Pd: 50 g/ft3 NOx sorbent: 0.25 g/in^3 BaO, 0.08 g/in^3 ZrO_2

With respect to the language of the claims, Trap C is considered to meet the claimed first zone and Trap E is considered to meet the claimed second zone.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Deeba et al.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-20 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sung et al.

The teachings of Sung et al. (US 6,087,298) are as described above for claims 1-32. If it is considered that the disclosure of Sung et al. is not sufficiently specific to constitute anticipation within the meaning of 35 USC 102(b), then a rejection under 35 USC 103(a) is applicable. In this case, the reference does not disclose the exact amounts of the components required by the instant claims, although Sung et al. discloses ranges of components which overlap the composition instantly claimed. With respect to the encompassing and overlapping ranges previously discussed, the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time of invention to select the portion of the prior art's range which is within the range of the applicants' claims because it has been held prima facie case of obviousness to select a value in a known range by optimization for the results. *In re Boesch*, 205 USPQ 215. Additionally, the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness. *In re Malagari*, 182 USPQ.

Response to Arguments

Applicant argues his specification describes a difference between a "zoned structure" and a "layered structure." The examiner agrees. Applicant next argues that because of this difference described in the specification, Sung cannot meet the claim limitation because Sung

does not teach a "zone." The examiner disagrees. During patent examination, the pending claims must be "given the broadest reasonable interpretation." Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969). In the instant case, DICTIONARY.COM defines "zone" as "a region or area." In applying the Prater test by giving the claims its broadest reasonable interpretation, it is the examiner's position that Sung's layer meets the claimed "zone" limitation because the examiner interprets Sung's layer to be a region or area.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Johnson whose telephone number is 571-272-1177. The examiner can normally be reached on M-Th 7:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jonathan Johnson
Primary Examiner
Art Unit 1725

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